

# HERO





# INTRODUCTION



## Survey Authority

- **Naval Ordnance Safety & Security Activity  
(NOSSA)**

**Indian Head, MD**

**Mr. Charles Wakefield Code (N72)**

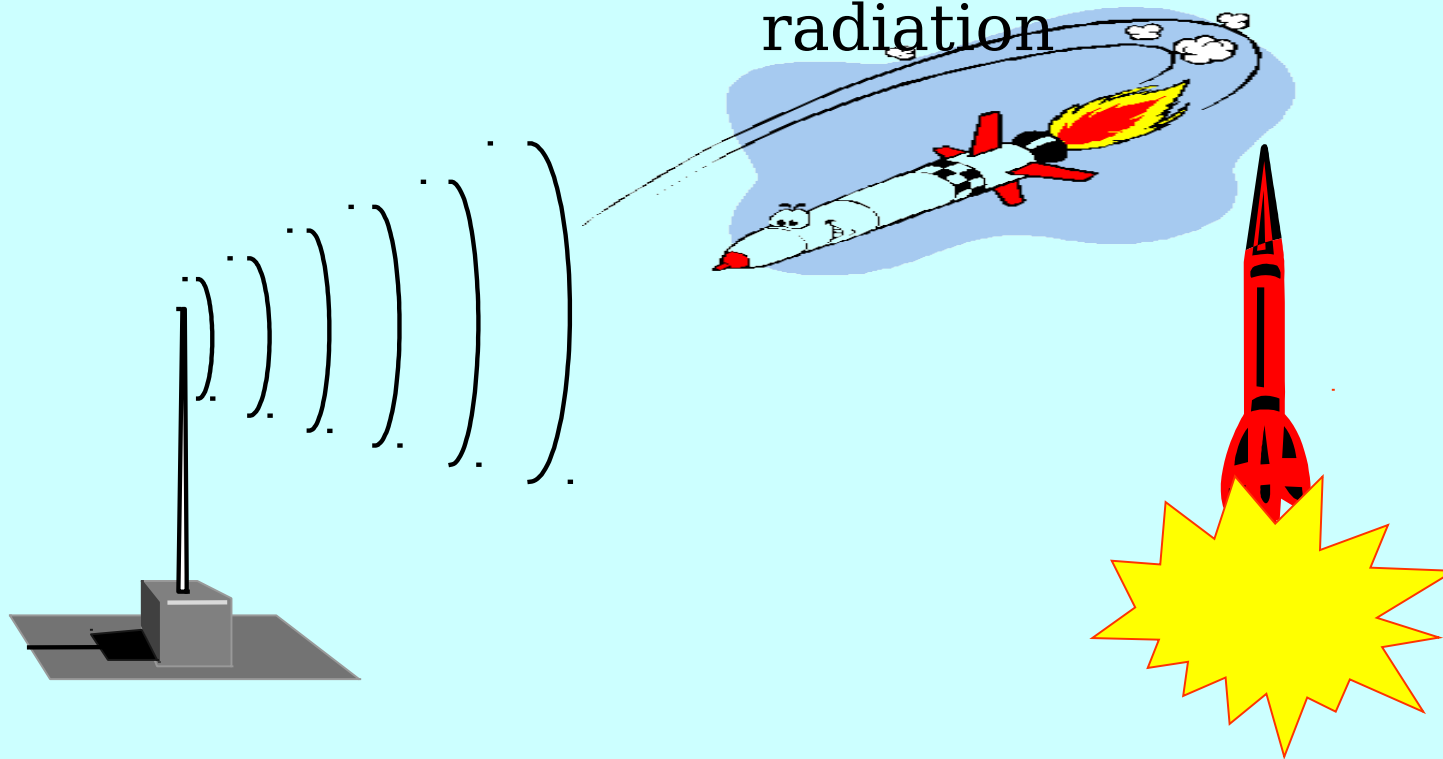
- **NAVAL SURFACE WARFARE CENTER  
DIVISION**

**(NSWCD) Dahlgren, VA**

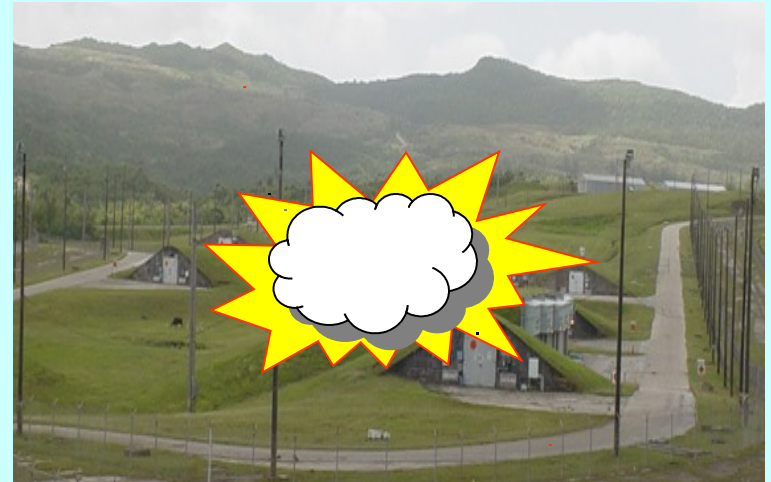
**Mr. Chuck Denham Code (J52)**

## **H**azards of **E**lectromagnetic **R**adiation to **O**rdnance

Potential for ordnance containing electrically initiated devices to be adversely affected by electromagnetic radiation



# HERO RISK



**CAUSE**

**EFFECT**

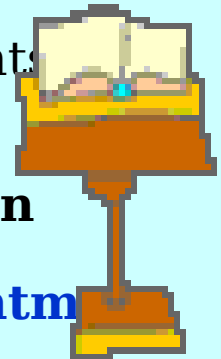
***Radar and Communication  
Emissions***

***Inadvertent Initiation or Dudding of  
EIDs***

## **Explosives Safety Technical Manuals (ESTM) contains the following NAVSEA publications:**

- NAVSEA OP 3565/NAVAIR 16-1-529, Volume 2,  
Thirteenth Revision of 1 May 04
- OP4 (AFLOAT)/OP5 (ASHORE) Ammunition & Explosives  
Handling &  
Storage Safety Regulations
- SW020-AC-SAF-010/ Transportation & Storage Data  
of Ammunition and Explosives
- SW020-AF-ABK-010/Motor Vehicle Driver Requirements  
Shipping for Ammunition and Explosives
- **Manuals are managed by the PHST Center, Indian  
Head, MD.**

<http://www.ih.navy.mil/phst2/Technical%20Data.htm>



# OP 3565

- **Technical publication to assist in:**
  - Identifying HERO Classification of Ordnance
  - Calculating the Electromagnetic Environments (EMEs)
  - Determining HERO Safe Separation Distances
  - Writing a HERO Emission Control (EMCON) Instruction
  
- To be placed on distribution for the CD-ROM,  
call DSN 4 64 or (732) 866-2834.







# HERO Survey Procedure



- Document all antenna/transmitter systems and their location
- Document ordnance transportation routes, operation and storage areas
- Review current EMCON procedures
- Measure the EME
- Analyze data to identify any potential HERO concerns
- Resolve identified concerns with ordnance and emitters



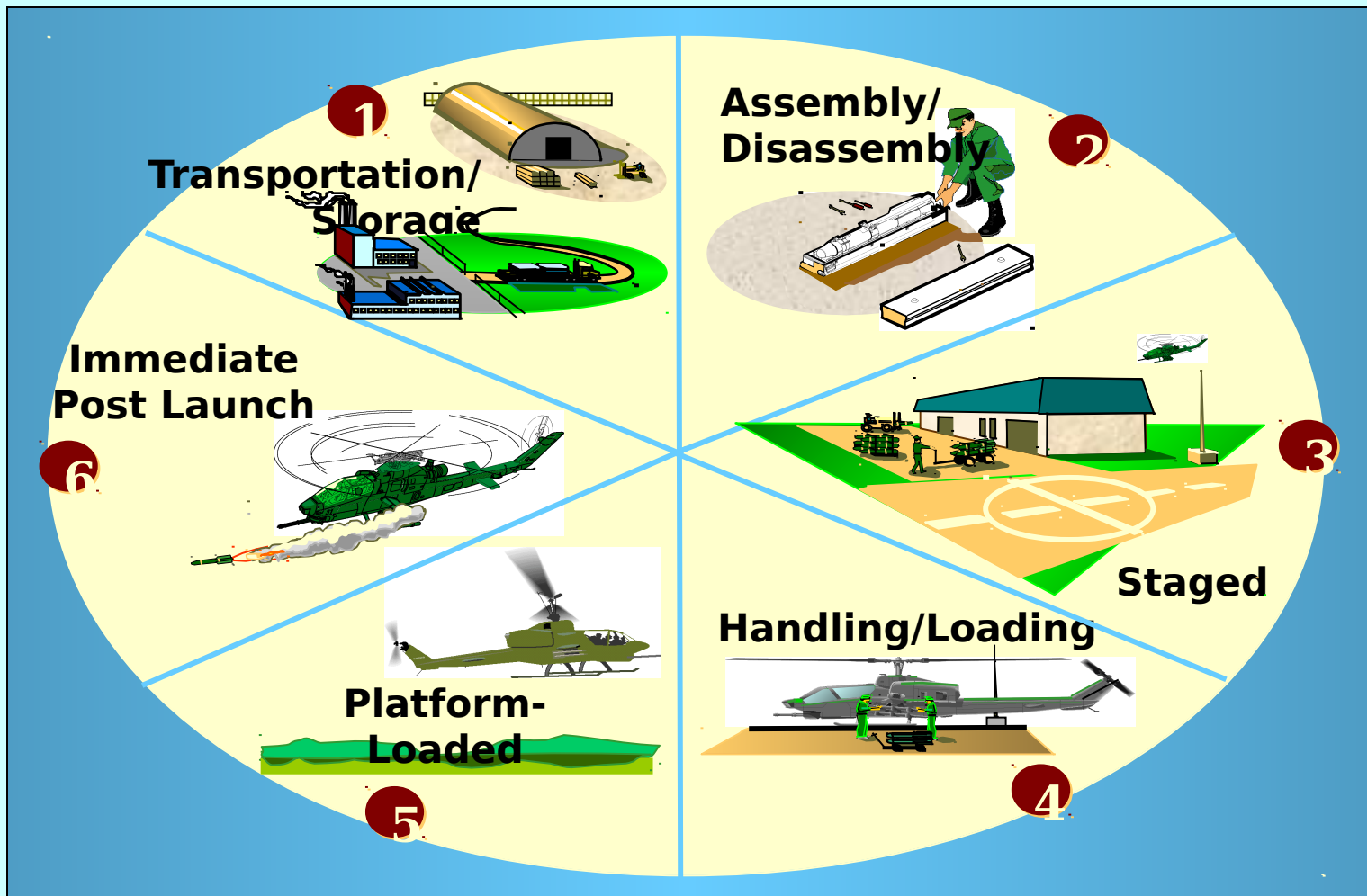
# General HERO Concerns



- Indiscriminant Use of Equipment that Emits RF Energy
- Coordination of Tenant Commands/Activities, Joint Services, and Coalition Forces, and Mobile Unit Training and Exercises
- Packaging/Repackaging of Ordnance
- HERO Training
- Stickers for Hand-Held/Portable Transmitters



# Ordnance Concerns



# Ordnance Concerns

- Ordnance packaged in wooden crates
- Ordnance breakout and distribution
- Ordnance returned from missions and training exercises

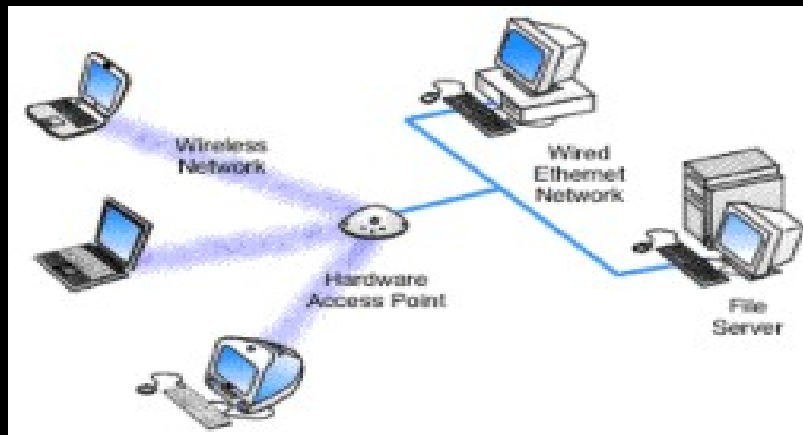


## ➤ Wireless Business Solutions

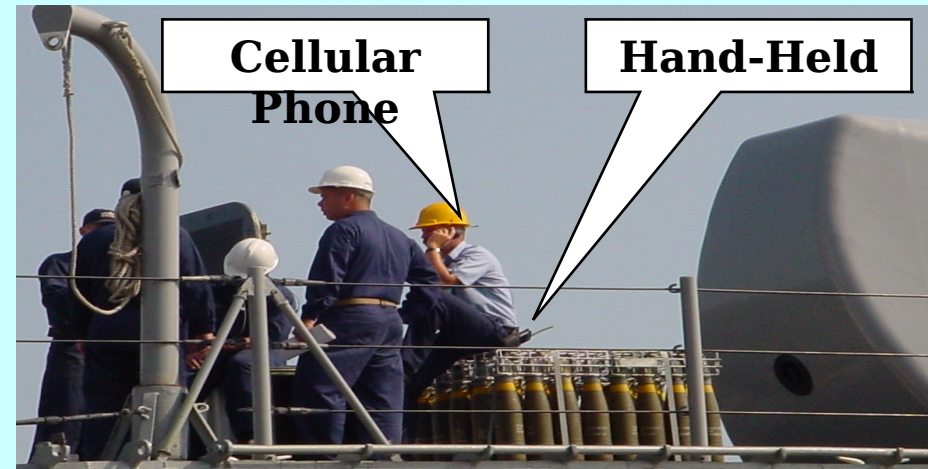
- Laptop Computers
- Wireless PC LAN/WANs
- Personal Digital Assistants (PDAs)

## ➤ Portable Emitters

- Cellular Phones
- Hand-Held Radios



**Wireless PC LAN/WANs**



**Portable Emitters**





**US Navy Facility**



**USAF Transmitters**



**USAF Aircraft**



**Joint Service Aircraft**



# Support Requirements



- Point of Contact for the duration of the survey
- Access to ordnance assembly/disassembly, handling/loading and storage areas
- Government vehicle and driver to access restricted areas
- Access to all areas of operation
- Personnel to operate systems that require testing

## **HERO Assessment report containing:**

- Guidance during specific ordnance activities
  - Procedures for EMCON
  - Antenna/Transmitter configuration lists with safe separation distances
  - Ordnance list with current HERO status
  - Sample tailored HERO EMCON Instruction
- ✓ Satisfies Explosive Safety Inspection  
[NAVSEAINST 8020.14B]

## **HERO EMCON procedures may include:**

- Power Management
- Reduce/Silence transmitter radiated power
- Frequency Management
- Coordinate frequency use

## **Alternatives to EMCON are:**

- Shield ordnance from EMEs
- Observe safe separation requirements

- Recommend alternate ordnance



# Appendix A

Antenna Number	Antenna Nomenclature	Antenna Type	Antenna Gain (dBi)	Transmitter Frequency (MHz)			Transmitter Max. Avg. Power (watts)	Transmitter Type	HERO UNSAFE ORDNANCE (feet/meters)	HERO SUSCEPTIBLE ORDNANCE (feet/meters)
	FA-9344	RECTANGULAR	33.5	2700	-	2900	875	AN/GPN-27	1489 / 454	372 / 113
FACSFAC	ASP Model K-51	WHIP	2.0	136	-	174	25	MOT D33MJ	133 / 41	33 / 10
3030	ANDREWS-3002A	SPIRA-CONE	12.0	2	-	32	1000	AN/URT-42(V)	4532 / 1382	1133 / 345
	GRANGER-3065	HTOA BOWTIE FAN	12.0	4	-	30	1000	AN/URT-42(V)	4532 / 1382	1133 / 345
	TCI-613	HTOA DIPOLE	7.0	2	-	6	1000	AN/URT-42(V)	2549 / 777	637 / 194
NEW NAVFAC	TACO D-2295	COLINEAR	2.1	118	-	137	50	MOTOROLA CMS200	219 / 67	55 / 17
NEW NAVFAC	TACO D-2295	COLINEAR	2.1	225	-	400	50	MOTOROLA CMS200	115 / 35	29 / 9
	TACO D-2212	COLINEAR	1.0	116	-	150	10	AN/GRT-21	88 / 27	22 / 7
	TACO D-2212	COLINEAR	1.0	116	-	152	25	AN/GRT-211	139 / 42	35 / 11
	TACO D-2218	COLINEAR	1.0	116	-	150	10	AN/GRT-21	88 / 27	22 / 7
	TACO D-2218	COLINEAR	1.0	116	-	152	25	AN/GRT-211	139 / 42	35 / 11
	TACO D-2218	COLINEAR	1.0	225	-	400	10	AN/GRT-22	45 / 14	11 / 3
	TACO D-2221	COLINEAR	1.0	225	-	400	10	AN/GRT-21	45 / 14	11 / 3
	AS 1018/URC	COLINEAR	5.0	225	-	400	10	AN/GRT-22	72 / 22	18 / 5
	AS 1097A/GR	COLINEAR	7.0	225	-	400	50	AN/GRT-22	202 / 62	51 / 15
	AS 1018/URC	COLINEAR	5.0	225	-	400	100	AN/URC-93(V)2	227 / 69	57 / 17
	AS 1018/URC	COLINEAR	5.0	225	-	400	100	AN/WSC-3(V)6	227 / 69	57 / 17
	CA-3438H	HELICAL	11.0	225	-	400	100	AN/WSC-3(V)3	453 / 138	113 / 35
	ANDREWS	PARABOLIC	40.0	7125	-	8500	1	COLLINS MW-518	40 / 12	10 / 3
	N/A	IFF ARRAY	27.0	1030			0.24	ATC-B1-5	31 / 9	10 / 3
	437B-1	COLLINS	2.1	225	/	400	20	AN/GRC-171	73 / 22	18 / 6
	TACO D-2274	DIPOLE	2.1	225	-	400	10	AN/GRT-22	51 / 16	13 / 4
	TACO D-2274	DIPOLE	2.1	225	-	400	50	AN/GRT-22 w/Linear am	115 / 35	29 / 9
	ASP-7A	DIPOLE	2.1	403	-	512	30	MOT T34JJ	50 / 15	12 / 4
3045 FAA	ASRS-4	3-D ARRAY	37.7	1215	-	1400	3054	AN/ARSR-4	10028 / 3057	2506 / 764



# Appendix B



<u>NALC</u>	<u>Class</u>	<u>Nomenclature</u>	<u>HERO Status</u>
AA06	P	CARTRIDGE, CALIBER, .50 W/M9 LINKS, (1) API MK 211 MOD 0, (1) AP M2, (1) API MK 211 MOD 0, (1) AP M2, AND (1) API-T M20 CART, F/M2.	NO HERO REQ.
AA11	P	CARTRIDGE, 7.62 MM	NO HERO REQ.
AA12	L	CARTRIDGE, 9 MM, FX MARKING, RED NSN 1305-01-424-2410 P/N 5300432 NSN 1305-01-439-9717 P/N 5300432 (0T AND 2T COG)	NO HERO REQ.
AA20	Q	CARTRIDGE, 20 MM, DUMMY, M51A4N, W/MK 7/1 LINK NSN 1305-01-448-9275 P/N 1298255	NO HERO REQ.
A011	L	CARTRIDGE, 12 GA SHOTGUN, NO. 00 BUCKSHOT NSN 1305-01-386-2464 P/N 5355700 NSN 1305-01-232-8338 P/N 12551623	NO HERO REQ.
A017	L	CARTRIDGE, 12 GA SHOTGUN, NO.9 SHOT NSN 1305-01-232-7415 P/N 12551626	NO HERO REQ.



## HERO LABELS

NAVSEA Form	Stock Number	Size
NAVSEA 5104/4	0116-LF-115-0700	1.5 X 2.3
NAVSEA 5104/3	0116-LF-115-0800	2 X 2.3

## Correct Order Numbers

NAVSEA Form	Stock Number	Size
NAVSEA 5104/3	0116-LF-115-0700	2 X 2.6
NAVSEA 5104/4	0116-LF-115-0800	1.5 X 2.3

<http://forms.daps.mil/order/search2.cfm>